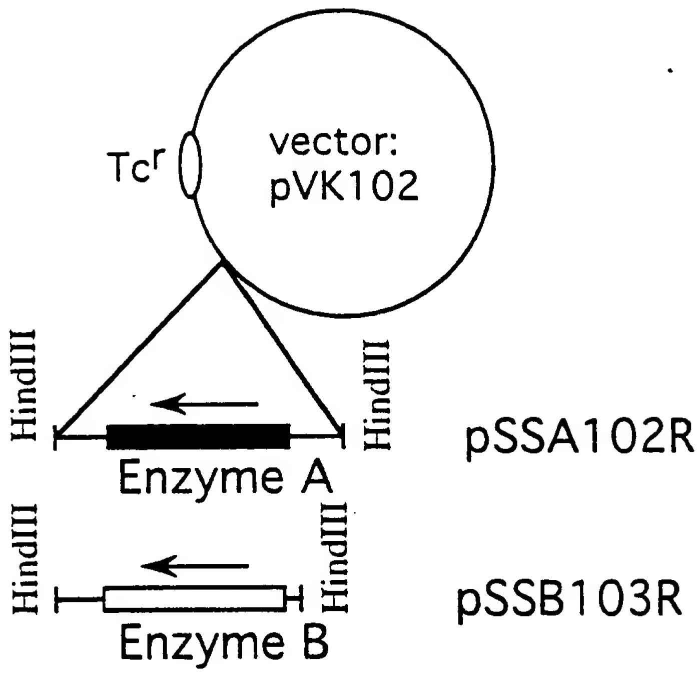

Tc^r
vector:
pVK102
HindIII
HindIII
pSSA102R
Enzyme A
HindIII
HindIII
pSSB103R
Enzyme B

Fig. 1.

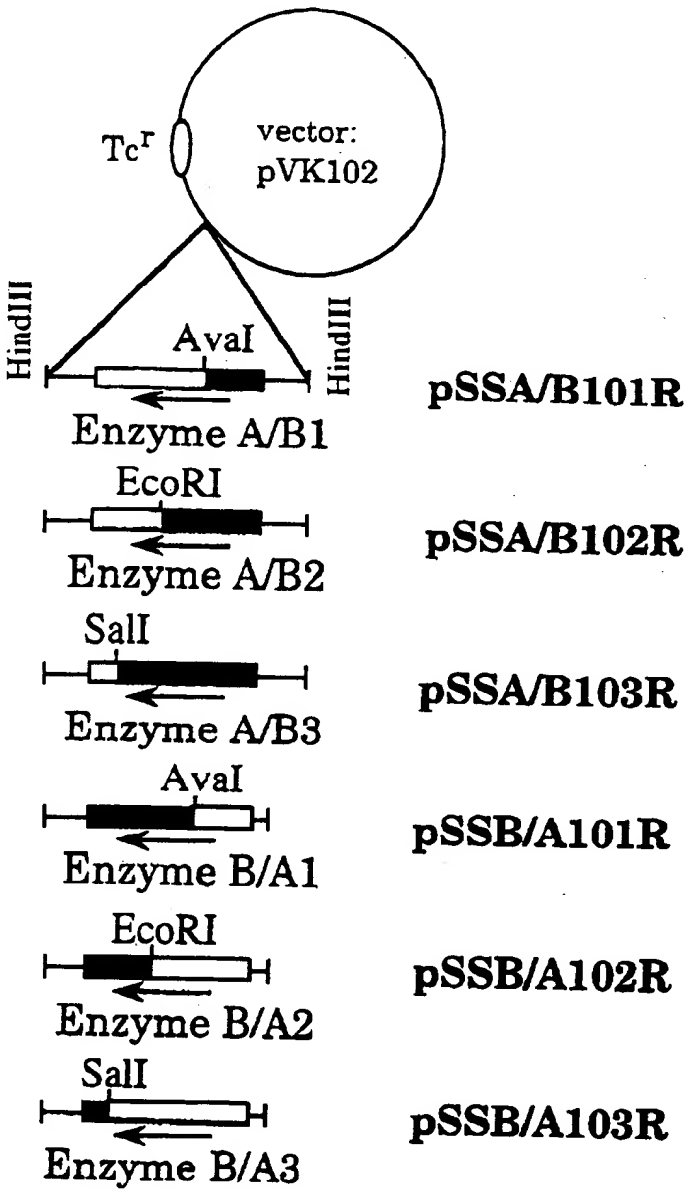
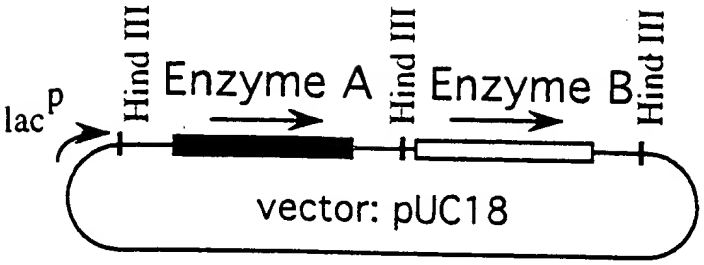

Tc^r
vector:
pVK102
HindIII
AvaI
HindIII
Enzyme A/B1
pSSA/B101R
EcoRI
Enzyme A/B2
pSSA/B102R
SalI
Enzyme A/B3
pSSA/B103R
AvaI
Enzyme B/A1
pSSB/A101R
EcoRI
Enzyme B/A2
pSSB/A102R
SalI
Enzyme B/A3
pSSB/A103R

Fig. 2.

pSSAB201



pSSBA201

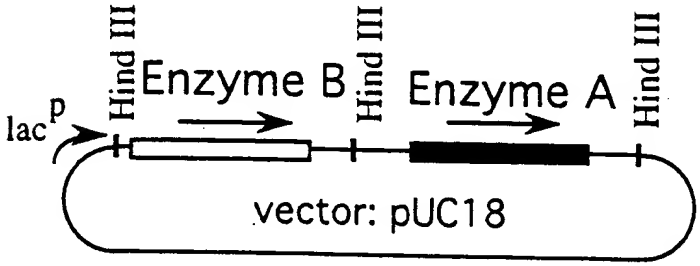
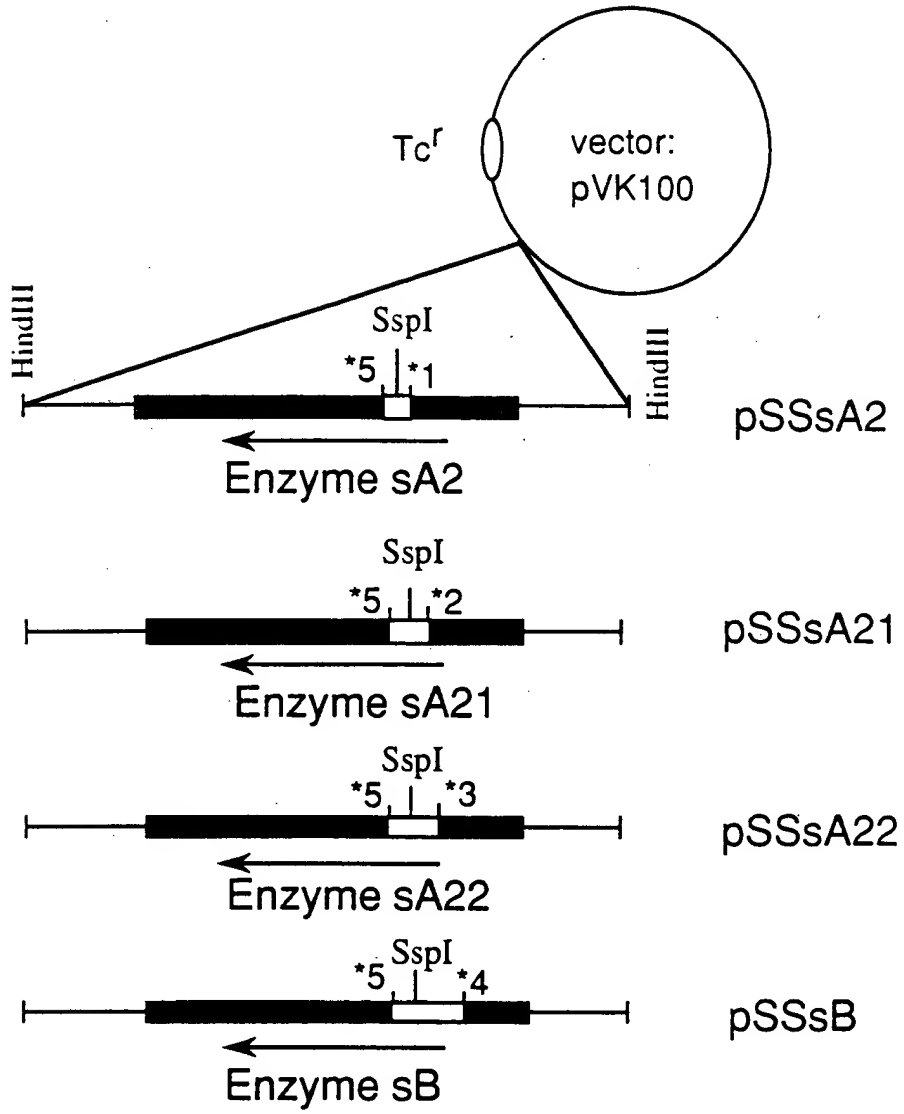


Fig. 3.



Recombination site

*1 : amino acid residue No. 135 of mature Enzyme A

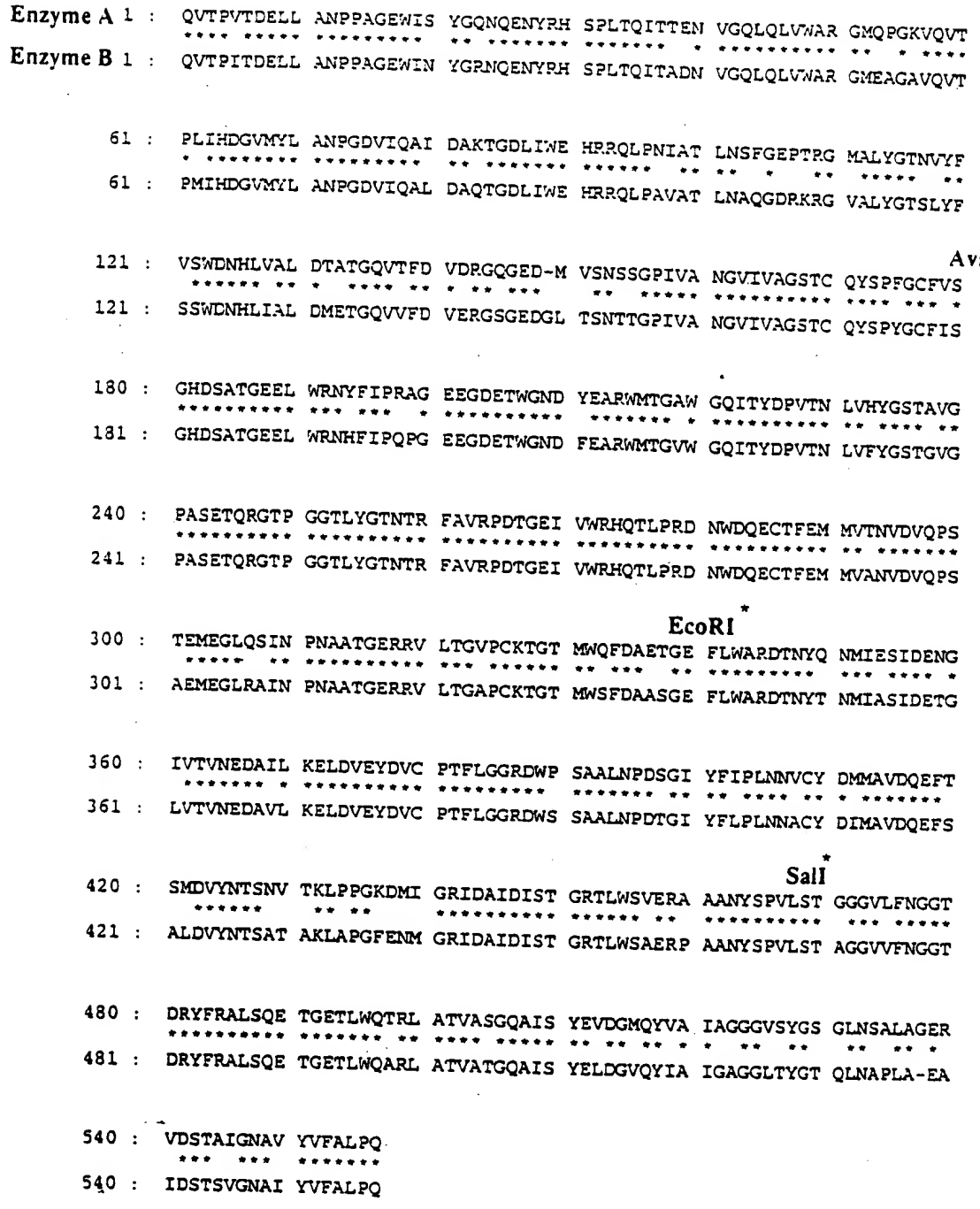
*2 : amino acid residue No. 128 of mature Enzyme A

*3 : amino acid residue No. 125 of mature Enzyme A

*4 : amino acid residue No. 95 of mature Enzyme A

*5 : amino acid residue No. 180 of mature Enzyme B, which nucleotide sequence of AvaI site encodes

Fig. 4.



* : Nucleotide sequences encoding these regions are the restriction sites for AvaI, EcoRI, and SalI which were used for constructing chimera genes shown in Fig. 2.

Fig. 5.

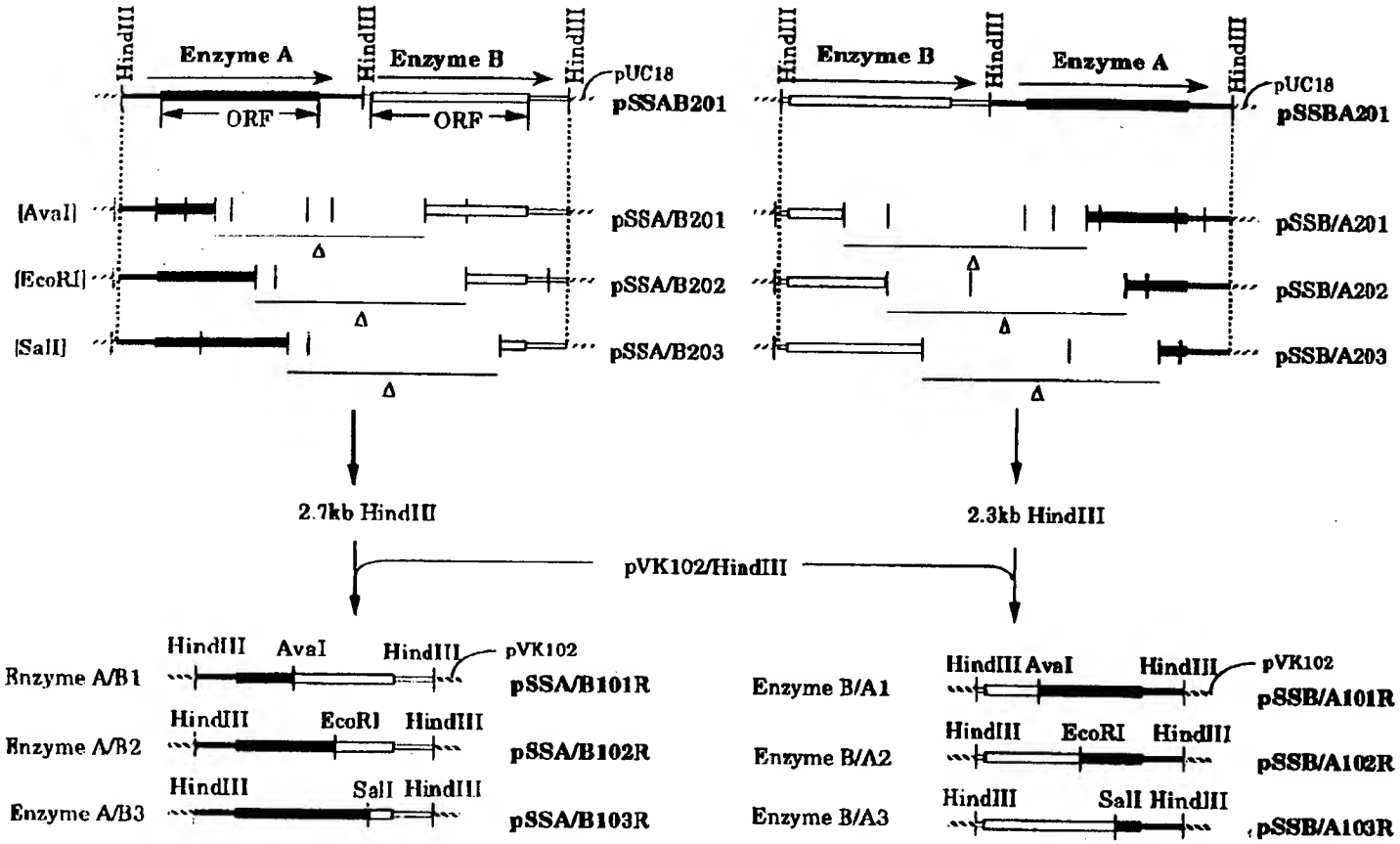
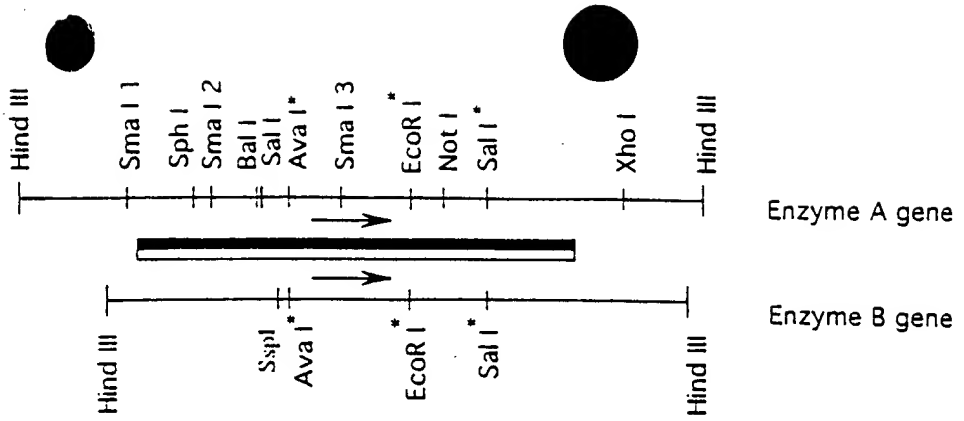


Fig. 6.



*: AvaI, EcoRI, SalI sites used for constructing chimera genes shown in Figs. 2 and 6.

Fig. 7.

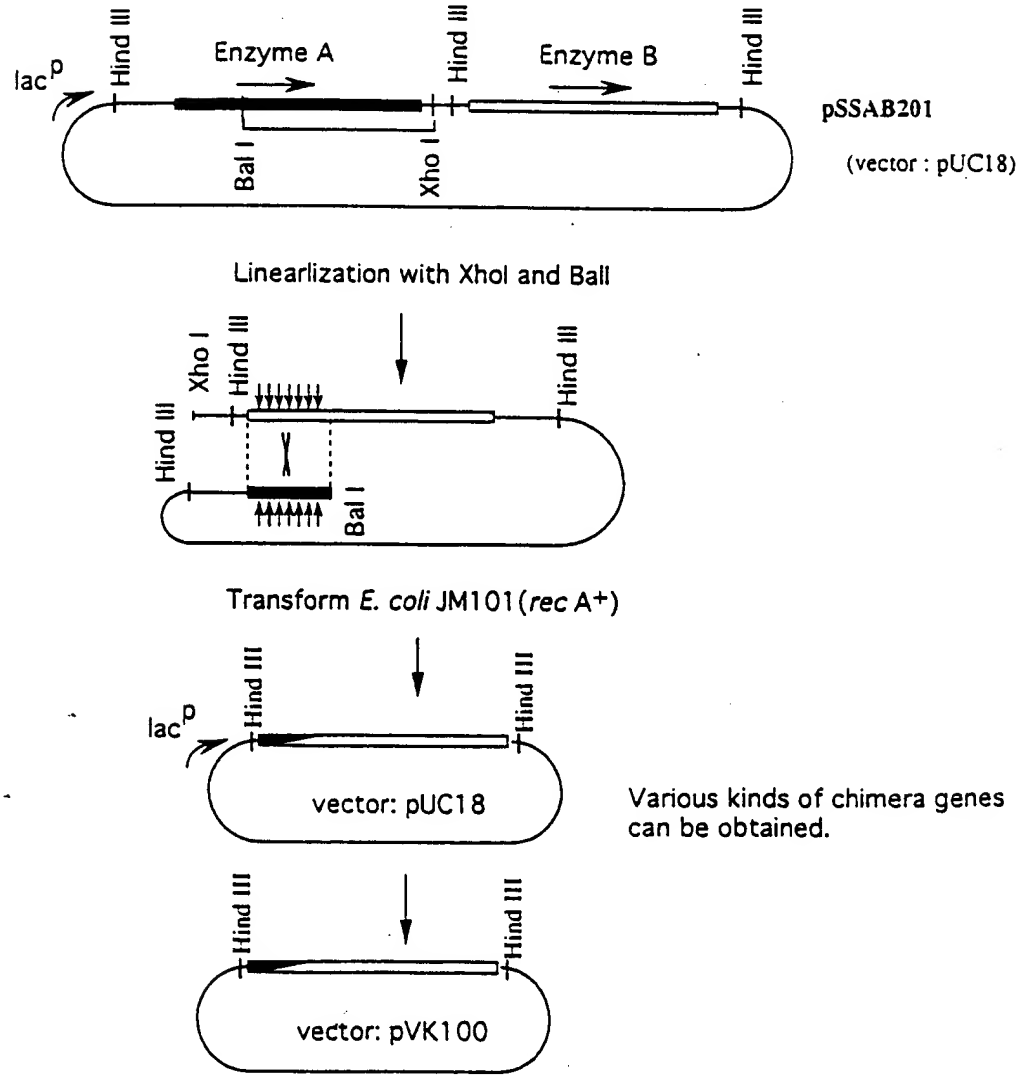


Fig. 8.

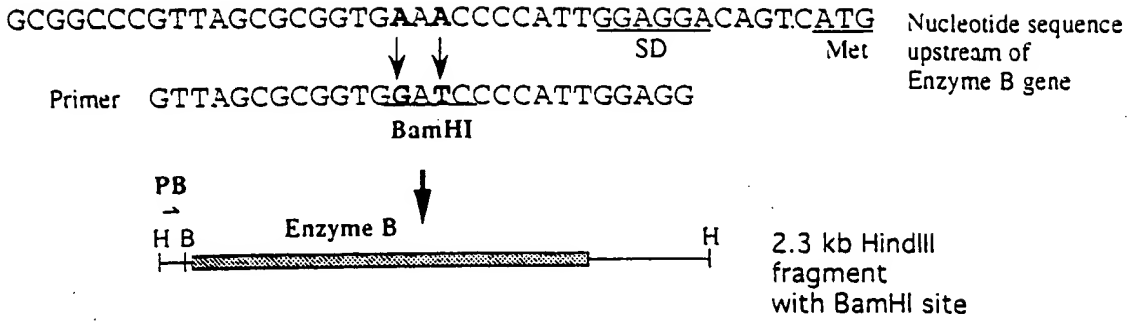

GCGGCCCGTTAGCGCGGTGAAACCCCATTGGAGGACAGTCATG
SD
Met
Nucleotide sequence upstream of Enzyme B gene
Primer GTTAGCGCGGTGGATCCCCATTGGAGG
BamHI
PB
H B
Enzyme B
H
2.3 kb HindIII fragment with BamHI site

Fig. 9.

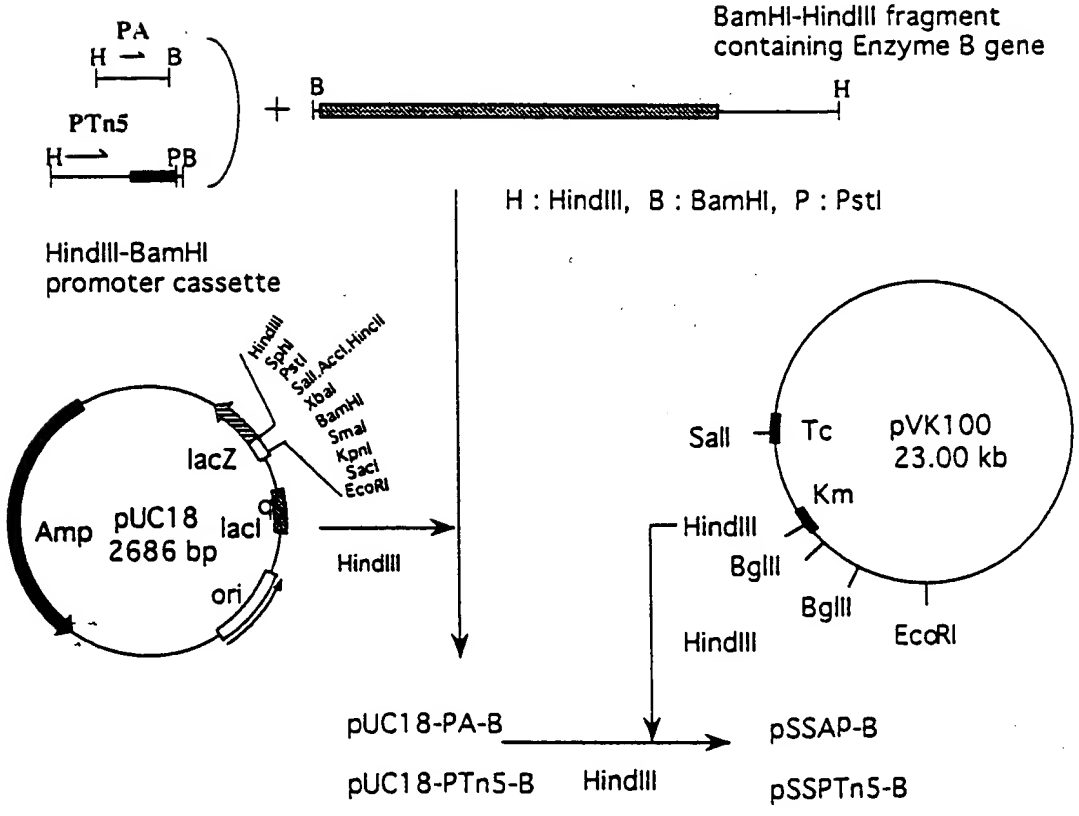
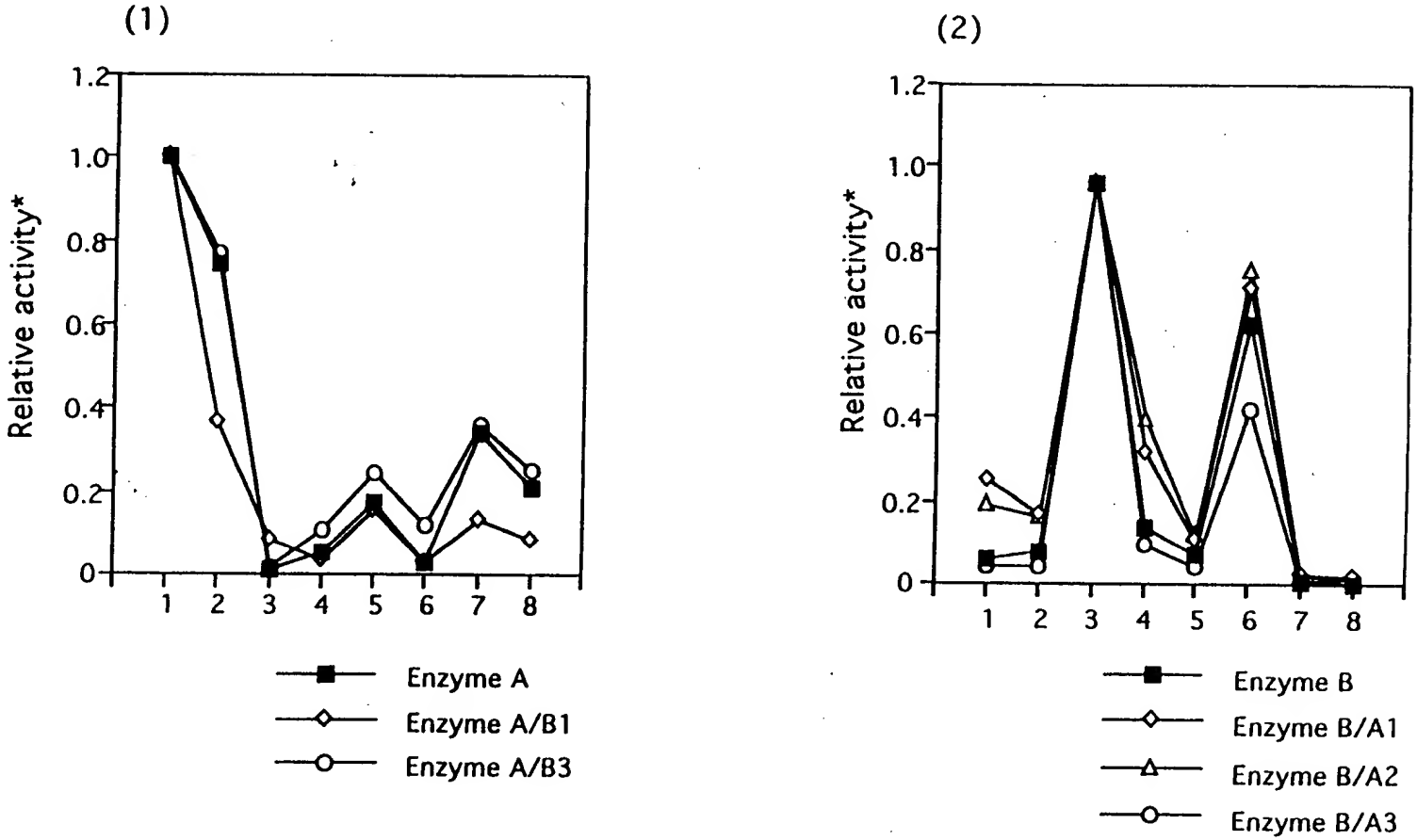

PA
H B
PTn5
H PB
BamHI-HindIII fragment containing Enzyme B gene
B
H
H : HindIII, B : BamHI, P : PstI
HindIII-BamHI promoter cassette
HindIII
SphI
PstI
Sall,AccI,HincII
XbaI
BamHI
SmaI
KpnI
SacI
EcoRI
lacZ
Amp
pUC18
2686 bp
lacI
ori
HindIII
Sall
Tc
pVK100
23.00 kb
Km
HindIII
BglII
BglII
HindIII
EcoRI
pUC18-PA-B
pUC18-PTn5-B
HindIII
pSSAP-B
pSSPTn5-B

Fig. 10.



1. n-Propanol, 2. Isopropanol, 3. D-Glucose, 4. L-Sorbosone
5. D-Sorbitol, 6. D-Mannitol, 7. L-Sorbose, 8. D-Fructose

*Enzyme activity was normalized relative to activity for n-propanol (1), or D-glucose (2). Enzyme A/B2 was excepted because of its low expression in *P. putida*.

Fig. 11.